CENTRAL INDIANA AEROMODELLERS

INFORMER

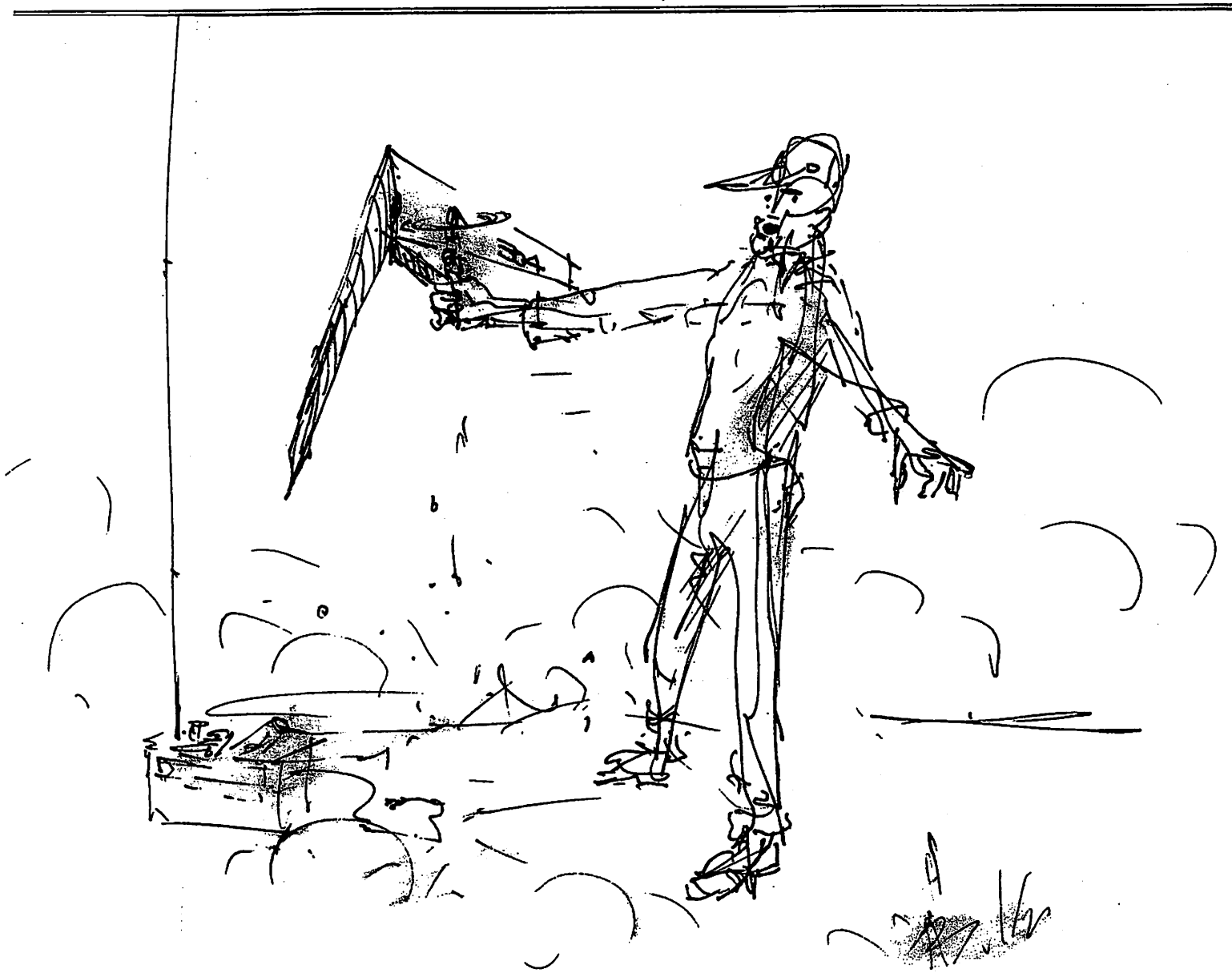
FREE FLIGHT NEWS OF THE MIDWEST

** The Weather **

April showers bring May thermals!

- Editor -
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Issue #2/03 March/April Price $7.50/yr.



"VP" – an F1P Possibility..... - by Hardy Brodersen Check the 3-view on p.3 for the particulars on this tailless power ship! (F1P is a new power class dedicated to the (har!!) beginner.) *"VP"* is Hardy's interpretation of a possible contender in this new class. Additional thoughts about his model are as follows:

- Power Pattern: Straight up! Power cuts; model stalls; quick flip to glide...
- Glide turn? Weight in wingtip...
- DT? Spoiler on one side. Spirals down; lands in grass...
- Launch Procedure: Start engine, holding model by "grip". Adjust remote needle in "firewall". Extend arm, push model straight up – timer release is part of grip. Where's the Fat Cat??

Oh, yeah. The artwerk above is courtesy of Hardy....

did you know?? To whistle is to converse with the devil – or invite him in!! Sailors, actors and actresses, and miners are particularly cognizant of the ill luck associated with whistling. On board ship, whistling is thought to raise a storm. In the theater, it is believed to close the show prematurely. For miners, it is a sign of alarm.... Wonder what it does to FF'ers???

Hints 'n Tips... From Agent **Dave Thomson** come these useful tidbits: a mini-sander may be fashioned by cutting the bristles from battery operated toothbrushes. Next, glue on a foam pad, then sandpaper to the foam....

White & yellow glues have a 2 year shelf life! Franklin *(Titebond)* date code is as follows: 2G xxxx (2=last digit of year made; G=7th letter of alphabet=7th month of the year=July. How 'bout that!!

Elmer's date code is as follows: H23A-H=year (2002), (I=2003); 23=day of month; A=month (where A=Jan, B=Feb, etc...)

CHARGING SEALED LEAD-ACID BATTERIES

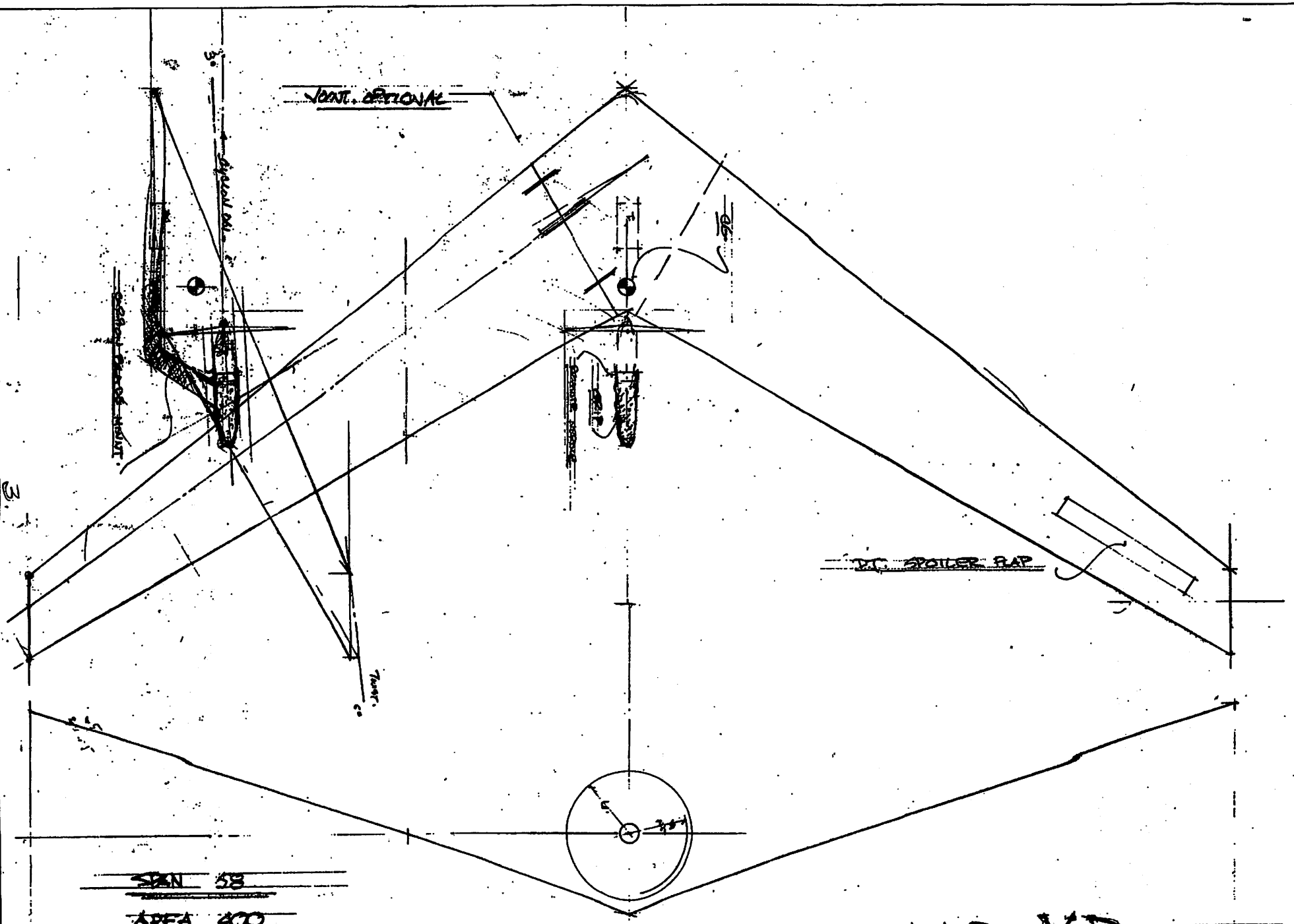
by Richard Covalt

Sealed lead-acid batteries are becoming the portable power source of choice where fairly large amounts of power and/or high intermittent discharge rates are needed. Sealed lead acid batteries eliminate the problems with mounting position, acid spillage and acid boil-off which can be a persistent problem, if charging is done inside an enclosure such as a flight box. A sealed lead-acid battery can be charged in any position but upside-down, and used in any position without danger of acid spillage. While the cost of a sealed lead-acid battery is about 50% more than the typical flooded cell motorcycle battery, many users are finding the extra cost yields rewards in the elimination of electrolyte loss and corrosion, mounting flexibility, and, if used and charged properly – longer life.

A charger designed for 12V sealed 'gel-cell' type lead-acid batteries is helpful to prevent overcharging and potential damage to the battery. This type of charger has two charging steps, which allows relatively rapid recharging without the danger of overcharging. The first step is a constant current (CC) charge until the battery voltage reaches approximately 14.3 volts. At that point the charger switches to a constant voltage (CV) taper charge. The CB taper charge is designed to limit the charge rate to about 1% of ampere-hour capacity at 13.8 volts. This 2nd step low current taper charge will supply the finish recharge in 2-5 hours and can continue for a few days without reducing the battery life or damaging a sealed lead acid battery. This two step charging scheme with a 1 amp CC charge rate will typically allow the full recharge of one half the battery ampere-hour (AH) capacity in 55% of the time required by a one ampere constant voltage charger tapering to the 1% ampere-hour (AH) charge rate (i.e. for a 10AH battery – 10 hours vs. 17 hours). However, 95-98% of the battery recharge is complete when the charger switches (at about 7 hours with a 10AH battery) from CC to the CV taper charge. Of course, a higher CC charge rate (up to manufacturer's recommendations) will reduce the recharge time even more. The important thing is that the 2nd step CV taper charge rate at 13.8 volts does not change from the 1% AH charge rate.

A one amp 2-step charger can normally be used to charge sealed lead acid cells of four ampere-hour capacity or larger, however never exceed the manufacturer's maximum charging rate recommendations. Manufacturers typically recommend a charging rate in amps of 25% the AH rating, and some are now recommending as much as 35%. Less than the maximum recommended is OK, but more is asking for damage. Any charger that doesn't exceed the maximum charge rate can be used, but if it is not a 2-step switching type the voltage must be constantly monitored to insure against overcharging. Indiscriminate use of a typical one amp motorcycle battery charger can cause excessive internal pressures to build up at full charge, rupturing the plastic case and ruining the battery.

(cont'd p.4)



SPAN 58

AREA 400

WT 250 G.

3/8" = 1'

F1P-VP

BROKENSPAR 2-6-03

(charging lead-acid batteries – cont'd...)

When a lead acid battery is fully discharged the open circuit terminal voltage is 11.88 volts, and at full charge 13.08 volts. The relationship of voltage to charge condition is linear over the full range of open circuit terminal voltage, but is temperature sensitive, affected by recent charge/discharge events, and difficult to measure accurately.
Therefore, using this knowledge to determine battery state of charge is not accurate enough for practical purposes. Timing the recharge is not a sure answer either as there is no exact way of knowing how much of the battery capacity needs recharging. Running the battery all the way down before recharge (called deep cycling) is also a no-no because lead acid batteries unlike Ni-Cds do not last long when deep cycled. For the most effective service life with a lead acid battery avoid discharging more than half way before recharging unless it has been specifically designed for deep cycling. Marine batteries are the most common deep cycling batteries and even they will last longer if deep cycling is avoided.

A 2-step charger also works very well on regular flooded-cell motorcycle type lead acid batteries. If you have needed to add water to your portable starter or glowdriver battery (flooded cell type) a couple of times a year you have been overcharging. If you use a 2- step charger the battery will probably wear out before enough electrolyte is boiled off to require adding water.

MORE ABOUT BATTERIES (THAN YOU EVER WANTED TO KNOW...)

Ampere-hour capacity of a battery is generally specified at the 20 hour rate. The capacity rating is derived from multiplying the current in amps a battery will supply for a given period of time by the time interval. For example, a 10AH battery will supply 1/2 amp for 20 hours. 1/2 amp times 20 hours equals 10 Ampere-Hours. A battery has internal resistance so if you increase the discharge rate, an increasing amount of the battery power will be dissipated inside the battery. For example, at a 1 amp discharge rate you would find the typical 10AH battery would last for only 9 hours. 1 amp times 9 hours equals 9AH. The missing lAH has been dissipated by the battery internal resistance.

When discussing charging batteries a general terminology is needed to allow for the different AH capacities of the various batteries. It is common terminology to designate the AH capacity as "C" (for capacity). For example, a 10AH battery would have a capacity expressed as C = 10. Now some generalizations can be expressed that apply to all sizes of batteries. General charging parameters for sealed lead acid batteries are as follows:

Quick charge in amps = 0.25C or less (some mfg.'s may be greater) Finish charge in amps = O.IC to 0.05C
Float charge in amps = O.OIC to 0.005C ,
Converting the above to charging say a 10AH battery where C=10:
Quick charge in amps = 10 times 0.25 = 2.5 amps max
Finish charge in amps = 10 times 0.1 or 0.05 = 0.1 to 0.05 amps
Float chm:ge in amps = 10 times 0.01 or 0.005 = 0.01 to 0.005 amps.
(Note: Fractional amps such as 0.01 to 0.05 amps would be commonly expressed in milliamps as 100 to 50 ma.)

A new terminology "float charge" was introduced in the preceding paragraph. A float charge is a very low level charge rate that the battery can accept indefinitely without damage or degradation of battery life. It is generally used on batteries supplying uninterruptable power supplies to insure the batteries are always fully charged, or on batteries being stored for a long period of time, such as over the winter. A float charge should only be applied after a battery is fully charged because of the excessive time required to return the battery to a fully charged state. Long periods of time during which a lead acid battery is not fully charged will cause battery plate degradation. Batteries in storage self discharge at varying rates depending on the battery echnology, age, condition of the battery, and storage temperature. The self discharge rate can range from 1 % to 30% per month. A sealed lead acid gel-cell type battery in good condition, stored at room temperature self discharges at 1 - 3% per month. NiCd batteries are in the 30% range, but are not damaged by partial discharge over a long period of time. Lead acid batteries on the other hand, left over a period of time to partially discharge lose capacity permanently. A lead acid battery wears out by failure of discharged material in the battery to convert to its charged state. When a battery is discharged the lead oxide (PbO) on the positive plate is converted to lead sulfate (PbSO4.) The negative plate in the charged condition is composed of elemental lead which is also converted to PbSO4 when discharging takes place.

Over a period of time any PbSO4 residing in the plates slowly changes structure to what is called "hard sulfate" meaning that charging - regardless of how much charging is done - will not convert it back to active "charged" material. So battery aging is the accumulation ofPbSO4 hard sulfate over a period of time. The accumulation ofPbSO4 causes the internal resistance of the battery to increase, decreasing the output voltage with a given load, and reducing the AH capacity of the battery due to less active material to hold a charge. If your starter battery has some age on it and your starter doesn't seem to have the torque it did when the battery was new, or if your battery seems to run out of charge quick, it is probably not your imagination just battery degradation due to aging. Battery degradation due to use cannot be avoided but it can be slowed down greatly by never letting it sit around uncharged - and avoiding deep cycling as much as possible.

INSTRUCTIONS FOR THE K. FAGS HAND SPRING WINDER

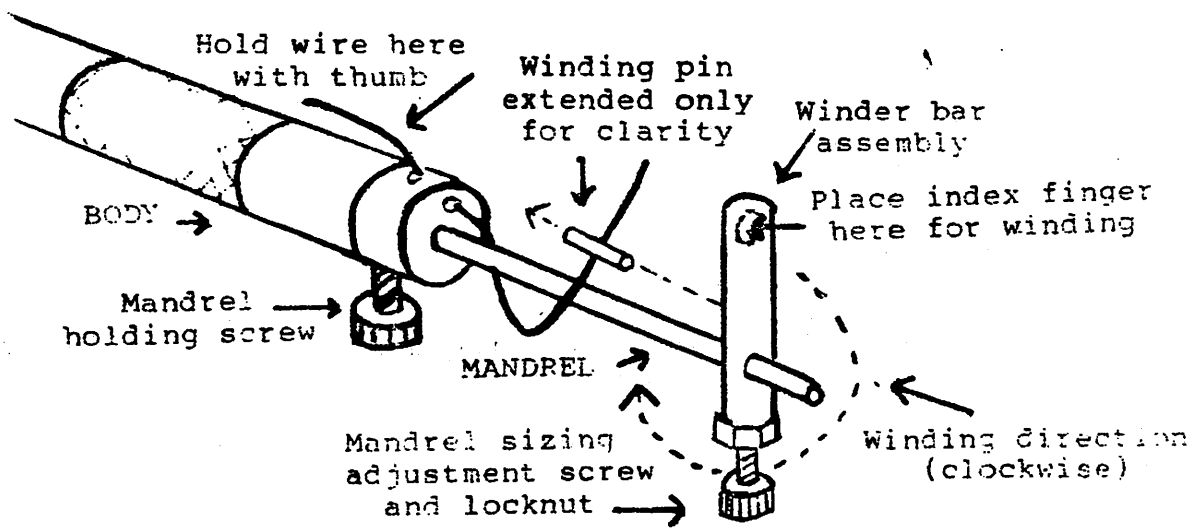
The K. Fags Hand Spring Winder will make small coil springs without any supplementary power tools. A pocket knife, needle nose pliers and a small diagonal cutter is all that should be needed.

Springs may be made on any of the mandrels supplied and any other stiff wire in ranges of .020 to .080. With careful handling, springs on .012 mandrels have been made. Any wire size from .004 to .014 may be used. To use larger wire will put a strain in the mandrel holder.

Both extension and compression springs are made with this tool. Compression springs are made by winding regular extension springs and stretching them as needed, as is done commercially. Commercially acceptable tempered springs can be made by heating the finished springs in a household oven at 300 to 350° F for 1/2 - 1 hour. This will relieve any work hardening induced in forming.

1. Place desired mandrel size in center-hole of handle body and lock in place with mandrel holding screw.
2. Place one end of wire (about 12" long) in hole above center in face of holder handle.
3. Grasp handle in left hand and place left thumb over wire to keep in place.
4. With right hand wind wire tautly over mandrel (away from you) one turn.
5. Place preadjusted winder bar onto mandrel and engage wire behind pin.
6. Carefully place index finger toward top of winding bar retaining pressure and tension toward hub. Initially spin bar between index finger and thumb about three turns. Shift over to index finger and wind as if you were winding a rubber model airplane motor.
7. If you have a jumbled jam of wire in the first few turns or the winder bar resists turning, you made the mistake of engaging the first turn of wire twice. It is best to remove wire and start again.
8. To form loop ends, cut length of coil needed, count out two turns and bend these coils out with a pair of dikes or a pocket knife.

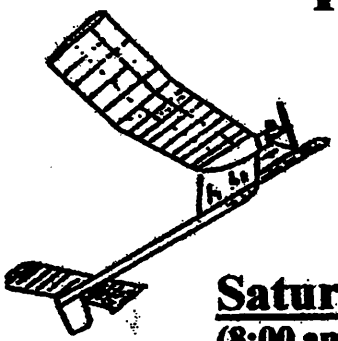
Designed and manufactured by: Kevork K. Fags 236 Thayer Street
River Vale, New Jersey 07675 (Tel) 1-(201)-664-2606



Spring Opener Free Flight Contest

Formerly The FFAMS Contest

AMA National Flying Site - Muncie, Indiana
AMA Sanctioned - Category III



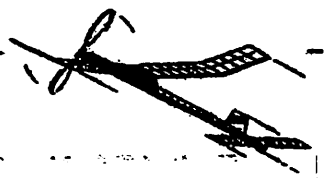
May 17-18, 2003

Saturday
(8:00 am to 5:00 pm local time)

- Catapult Glider (J)(SO)
- P-30 (J)(SO)
- A Gas (JSO)
- 1/2 A Classic Gas (J)(SO)
- CD Classic Gas (JSO)
- B Nostalgia (JSO)
- ABC OT Pylon/Fuselage (JSO)
- OT Rubber Fuselage (JSO)
- Nostalgia Rubber (JSO)
- F1A (JSO)
- F1B (JSO)
- F1C (JSO)

Sunday
(8:00 am to 4:00 pm local time)

- Hand Launched Glider (J) (SO)
- Moffet (JSO)
- 1/2 A Gas (JSO)
- C Gas (JSO)
- AB Classic Power (JSO)
- 1/2A Nostalgia (JSO)
- OT Rubber Stick (JSO)
- Nostalgia Wakefield (JSO)
- F1G (JSO)
- F1H (JSO)
- F1J (JSO)



Entry Fees: Open $10 (includes all events) Juniors & Seniors FREE.

Awards: Plaques for FIRST.
Certificates through THIRD.

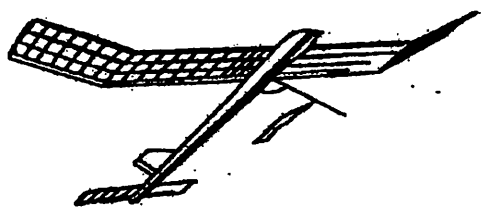
AMA or MAAC membership required. Youth memberships available for Junior and Seniors $1.0

Event Rules: Current AMA, FAI, NFFS Nostalgia and SAM Old Time rules apply.

F1A,F1B,F1C,F1G, F1H, F1J will be flown in rounds. 1 and 1/2 hour rounds beginning at 9:00. Rounds to start on the hour with 1/2 hour overlap. Flyoffs if necessary to begin at end of rounds.

The weather can be volatile this time of year. Maxes may need to be adjusted to keep models on the field.

America's Cup Meet
for the FAI - Events
F1A, F1B, F1C, F1G, F1J, F1H



National Cup Meet
with events for the following
5 National Cups:
AMA Power
AMA Rubber
AMA Glider
NFFS Nostalgia
NFFS Nostalgia Rubber
and the Junior National Cup

O.C. Stewart (AMA and Nostalgia Contest Director)
4308 E. Maple Manor Pkwy, Muncie, IN 47302
phone: 765-288-0071

Chuck Markos (FAI Events Contest Director)
655 Carlisle Ave, Deerfield, IL 60015
phone: 847-945-9225
email: cmarkosfl@aol.com

Central Indiana Aeromodellers

24th Annual

OLD TIMER
NOSTALGIA GAS
CLASSIC POWER
Regional Free Flight Champs

AMA Field, Muncie, Ind.- May 31 & June 1 2003

Sat May 31 (9-5) EST

1/4A Nos Gas
B Nos Gas
A/B/C Fuselage OT Gas
Early 1/2A Nos Gas
C/D Classic Power
OT Gas (Glow) Pylon/ Fuselage
Small OT Rubber Stick/Fuse
1/2A Classic Power [jr] [sr/op]

Sun June 1 (8-4) EST

1/2A Nos Gas
C Nos Gas
A/B/C Pylon OT Gas
A Nos Gas
Large OT Rubber Stick/Fuse
.020 Replica
A/B Classic Power
OT HLG /CAT

National Cup Competition for Nostalgia Gas & Classic Power

(AWARDS) thru 3rd place in all events
(ENTRY FEE) $10 first event , $5 each additional, $20 max, JR/SR FREE
(OLD TIMER) Sam rules except approved ignition engines only. No converts. Glow or Diesels
(NOSTALGIA GAS) NFFS Rules. 9 sec. engine runs Flyoffs are 6,6,6,6, etc.
(OLD TIMER GLOW) Any old timer model with any nostalgia legal engine (Nostalgia Rules)
(EXCEPTIONS) NO WEIGHT RULE and NO SCALING ALLOWED
(CLASSIC POWER) AMA RULES

CD: Gib Robbins, 1507 Patterson St., Anderson, Ind. 46012 (765) 644 2046
Alternate CD: Merideth Chamberlain 5810 S. Madison Av., (765) 643 1885

McCook Field Squadron
FAC



The McCook Field Squadron of the Flying Aces Club will hold a side-event with the CIA FF contest. Contest dates are 31 May- 1 June 2003 at the AMA site, Muncie, Indiana.

The Events scheduled are:

Saturday- 31 May (9am-5pm)
FAC Scale
FAC Jumbo Scale
Jetex/Rapier combined
Watson Unlimited Challenge*(not FAC rules)
FAC No-Cal Scale
FAC Power Scale

FAC WW I Combat (mass launch)
Grieve Race(mass launch)

Sunday- 1 June (9am-5pm)
FAC Peanut Scale
Embryo Endurance
Dime Scale
Elec. Ducted Fan Scale
Jimmie Allen

WW II Combat (mass launch)

CD: Frank Scott
937-335-3057
dragoon163@yahoo.com

CD: Dan DeAngulo
937-832-3241
DAD4584@core.com

* Watson Unlimited Challenge Rules: (McCook Special event)
1. Model must be propelled by 24" length of 1/8" rubber.
2. Timing is total of best 2 of 3 flights, no max.
3. There are no more rules. (have fun with it).

Entry Fee: $10. AMA Lic. Reqrd. Plaques: 1st Place, Certificates: 2nd, 3rd.

NATIONAL CUP CHALLENGE FF CONTEST

AMA & National Cup Sanctioned Class A Contest

The 2nd Half of a Four Day
CIA Fly 'till You Drop Event
Cup Events for All Ages

June 2 (Mon) & June 3 (Tues), 2002
8 to 5 Mon, 8 to 4 Tues EST

International Aeromodeling Center, Muncie, Indiana

Featuring the Following National Cup Sanctioned Events:

(J & S/O)
1/2A AMA Power, P-30, OHLG, and OCG

(J/S/O)
A, B, C, and D AMA Power, Moffett, Mulvihill, NOS Rubber, and NOS Wake

This is a Category III Contest

Note: All other National Cup Events are included in the CIA Old Timer & Nostalgia FF Contest Saturday, May 31 & Sunday, June 1

Models may be spot processed

Entry Fee - $1.00 per event flown – Juniors free

Recognition certificates will be provided to all contestants that place in top 3 for each event

Fly any event either day, but must start and finish on the same day

CD: Bob Mattes, 190 Hunters Point Drive, St. Charles, MO 63304
Phone: (636) 447-9580 e-mail: rmattes@wans.net

2003 FIESTA OF FIVE FLAGS
TOM MCLAUGHLAN SOUTHEASTERN MODEL AIRPLANE CHAMPIONSHIP
PENSACOLA, FLORIDA - JUNE 14 & 15, 2003

CONTEST DIRECTOR: R. W. Junk, 984 Williams Ditch Rd, Cantonment, FL, 32533, 850-968-9619

FLYING SITE: Spencer Field (Navy Helo Aux Field) - Take US 90 East from Pensacola, proceed East approximately 2.5 miles past first traffic light after crossing bridge (through Pace), turn left (North) on East Spencer Road at large sign & stop light (Air Products & Chemicals), and proceed 1.5 miles to Spencer Field gate.

AWARDS: Trophies

ENTRY FEE: $10.00 for first event, plus $2.00 for each additional event. Juniors (under 16) $2.50. Registration cut-off at 12 Noon Sunday, June15.

SPECIAL INFORMATION:

1. FF Cat. III (7 seconds) - Old Timer SAM Rules
2. Old Timer Fly Off Ignition -15 seconds/Glow - 9 seconds
3. FAI Power, Wakefield, A-2, The America's Cup Competition - 3 min. max. Fly- off 5 min. etc. 1st Round 0900 - June 14, 2003
   FIJ Power, Coupe D'Hiver, FIH A1 Glider - 2 min. max 1st Round 0900 - June 15, 2003
4. Nostalgia Rules: National Free Flight Society Committee Rules - 9 second engine run.
5. AMA gas Fly off - AMA Rule Book
6. National Cup-America's Cup

ENTRY FORM

CIRCLE EVENTS ENTERED

Saturday, June 14th, 8 am - 5 pm		Sunday, June 15th, 8 am - 3 pm	
1/2 A Gas	J/SO	A Gas	JSO
B Gas	JSO	C Gas	JSO
P-30	J/SO	FIH - AI Glider	JSO
Wakefield	JSO	FAI Coupe D'Hiver	JSO
A-2 Towline Glider	JSO	Old Time Rubber Large	JSO
FIA Power	JSO	Nostalgia ½ A	JSO
Old Time Pylon A/B	JSO	Old Time Cabin A/B	JSO
Old Time Cabin C	JSO	Old Time Pylon C	JSO
Nostalgia (A)	JSO	Hand Launch Glider	J/SO
Commercial Rubber	JSO	Nostalgia C	JSO
Catapult Glider	JSO	Dawn Unlimited	JSO
Old Time Rubber Small	JSO	FIJ	JSO
Mulvihill	JSO	Moffett	JSO
A/B Classic	JSO	½ A Classic	JSO
C/D Classic	JSO	B NOS Gas	JSO

RELEASE: I, the undersigned contestant/parent, do hereby release any and all organizations connected with this meet from all claims which may arise with said meet. I certify that I am the Builder of all models entered and flown by me as covered by current AMA and/or FAI rules.

Signature: _____

PLEASE PRINT

Name:_____ AMA#:_____ Age:_____ JSO:_____

Address:_____ City:_____ State:_____ Zip:_____

Entry Fee Paid:_____ Contestant #:_____

Attention: NFFS, National Cup Participants 02/07/03

From: the Minneapolis Model Aero Club

Located fifty miles north of the Twin Cities, Harley's Sod Farm, North Branch, MN is the venue for one of four NFFS, regional National Cup exempt contests. This free flight site is ,perhaps, the premier FF site between Muncie and Denver. Because it is a working sod farm, certain restrictions must apply, notably : Retrieval on sod, grass or in the adjacent crops will be on foot only; no bikes on the sod or in the crops! No overnight camping on the field. On the plus side, there are many access roads at the site, which will facilitate retrieval.

North Branch, MN is located at the juncture of Interstate 35 and MN 95. The field is located just three miles east of North Branch, and just north of MN 95. North Branch boasts two fine motels, Americinn, (651)674-8627 and the Super 8 Motel, (651)674-7074 and a number of dandy restaurants. There are many lodging and camping facilities near the site. Information, maps and particulars can be had from the following contact people:

Gary Oakins, (651)429-3150 , email: gjoakie@goldengate.net

Jack O'Leary, (952)888-0638, email: OLryJhn@aol.com

Dale Mendenhall, (763)535-2976

MMAC "FALL MEET"

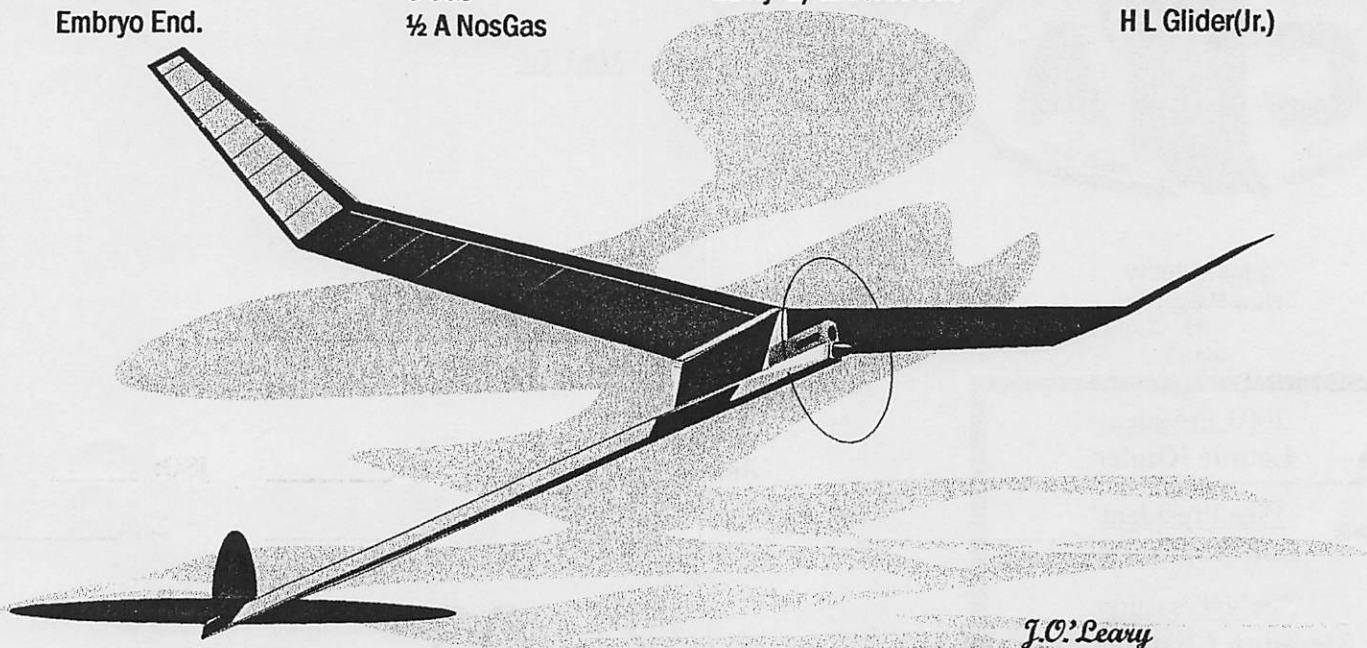
A NFFS REGIONAL NATIONAL CUP EXEMPT CONTEST

SEPT. 6 — DALE MENDENHALL,CD (763)535-2976

½ A Gas	¼ A NosGas	½ A Classic Power	H L Glider	P-30 (O), (Jr.)
B Gas	A NosGas	CD Classic Power	Nos Rubber	Moffett
D Gas	C NosGas	PeeWee 30	1/2A AMA (Jr.)	Cat Glider,Jr.

SEPT.7 — GARY OAKINS,CD (651)429-3150

AB Classic Gas	A Gas	Nos Wake	B NosGas
Mulvihill	C Gas	Early 1/2A NosGas	Cat Glider
Embryo End.	½ A NosGas		H L Glider(Jr.)



2003 FF Schedule

May	3,4	Eastern FF Championships	Higgs Farm, MD
	17,18	Spring Opener FF Contest	AMA site, Muncie, IN
	~~17,18~~ 24,25	Skyscraper Int'l Challenge	Wawayanda, NY
	31 - Jun1	USIC Indoor NATS	Johnson City, TN
	31 – Jun1	CIA OT/Nos/CIPwr FF Champs	AMA site, Muncie, IN
	31 – Jun1	McCook Field Sq (FAC)	AMA site, Muncie, IN
Jun	2,3	Nat'lCup Challenge FF Contest	AMA site, Muncie, IN
	6-8	AMA Grand Event	AMA site, Muncie, IN
	14,15	2003 Fiesta of 5 Flags	Pensacola, FL
	14,15	MAM Contest (FF & RC)	Sturgis, MI
	21,22	Inter-City FAI/Nos/AMA Contest	AMA site, Muncie, IN
	27-29	Great Grape Gathering	Geneseo, NY
Jul	6	IMAC Annual	Bong, WI
	13	Pelican OT Contest	Bong, WI
	19,20	FAC (Off-year Nats event)	Geneseo, NY
	20	Aeronuts OT Contest	Bong, WI
	28 – Aug 1	USOC/AMA Nat'l Champs	AMA site, Muncie, IN
Aug	10	Bong Eagles Annual	Bong, WI
	9,10	NOFFA Contest	AMA site, Muncie, IN
	15 – 17	Empire St FF Champs	Geneseo, NY
	17	Bong Eagles Silent Fly	Bong, WI
	23,24	Aeronuts Mid'n Sts FF Champs	AMA site, Muncie, IN
	25 – 29	SAM Champs	Claremore, OK
	30,31	COFFC Contest	AMA site, Muncie, IN
Sep	6 – 8	Flying Aces Midwest Nats	AMA site, Muncie, IN
	19 –21	CIA Regional FF Champs	AMA site, Muncie, IN
Oct	4,5	Tri-County Aero Contest	Lawrenceville, IL
	11,12	CIA FAC Contest	AMA site, Muncie, IN
Dec	29 –31	King Orange Int'l	Palm Bay, FL

The **INFORMER**

2348S, 700W
New Palestine,
IN
46163

2003 President
Lonnie Kinder

Vice President
Bob Abernathy

Sec'y/Treasurer
Meredith Chamberlain

Issue No. 2 - 03

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